



# **PARRY SOUND**

**water pollution  
control plant**

ONTARIO WATER RESOURCES COMMISSION

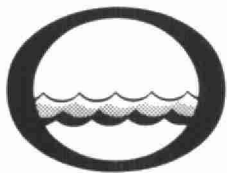
Division of Plant Operations

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*Water management in Ontario*

Ontario  
Water Resources  
Commission

135 St. Clair Ave. W.  
Toronto 7  
Ontario


We are pleased to present you with the Operating Summary for the water pollution control facilities operated for you during 1968.

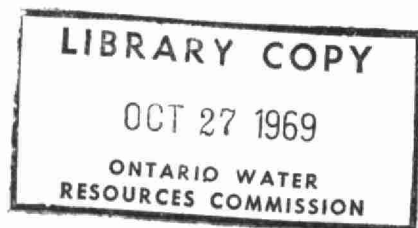
Both the financial and technical information presented should be of assistance to your present and future planning in this important phase of municipal activity.

A new format has been devised to allow greater readability with equally detailed content. We trust that this will meet with your approval.

Our staff wish to express their appreciation for your co-operation throughout the year.

  
D. S. Caverly,  
General Manager.

  
D. A. McTavish, P. Eng.,  
Director,  
Division of Plant Operations.



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**PARRY SOUND**  
**water pollution control plant**

operated for

**THE TOWN OF PARRY SOUND**

by the

**ONTARIO WATER RESOURCES COMMISSION**

**1968 ANNUAL OPERATING SUMMARY**

## FOREWORD

● This operating summary outlines the project's technical capabilities and financial status in 1968. Such information mirrors past and present performance, but a major intention is to anticipate the future -- to solve problems before they occur.

The new format in which this year's data are presented is designed to offer a higher level of readability than in the past, without a corresponding decrease in compactness, accuracy and detail.

Although your Regional Operations Engineer carries the major responsibility for the contents of the report, those involved in its preparation are attached to several Commission sections and divisions. The statistics section of the Division of Plant Operations compiled the information for the graphs and charts. The draughting section of the Division of Sanitary Engineering drew the graphs. The Division of Finance provided all cost data.

Only the close co-operation of these departments allowed the publication of this summary.

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## **'68 REVIEW**

The total operating cost for the project, including the operation of nine pumping stations, was \$32,277.42, or \$162.39 per million gallons treated.

A total of 198.76 million gallons was treated at an average daily flow of 540,000 gallons.

The average concentration of the raw sewage increased from 1967 to 124 mg/l BOD and 189 mg/l suspended solids. The effluent had an average concentration of 67 mg/l BOD and 31 mg/l suspended solids for a removal efficiency of 46 percent and 83 percent respectively.

Chlorination of the final effluent was practised throughout the year and odour control chemicals were used at McCurry Creek.

Design was started to modify the variable speed pump installation in the main pumping station.

A proposal was sent to the Town by the OWRC for a provincial type of project which would include the treatment works, final pumping stations and an outfall sewer at McCurry Creek. No decision was made.

## PROJECT COSTS

NET CAPITAL COST (Estimated)	\$840,342.61
DEDUCT - Portion Financed by CMHC-MDLB (Estimated)	<u>549,696.21</u>
Long Term Debt to OWRC	<u>\$290,646.40</u>
Debt Retirement Balance at Credit (Sinking Fund) December 31, 1968	\$ <u>21,443.25</u>
Net Operating	\$ 32,277.42
Debt Retirement	5,849.00
Reserve	4,789.67
Interest Charged	<u>16,018.93</u>
TOTAL	\$ <u>58,935.02</u>

### RESERVE ACCOUNT

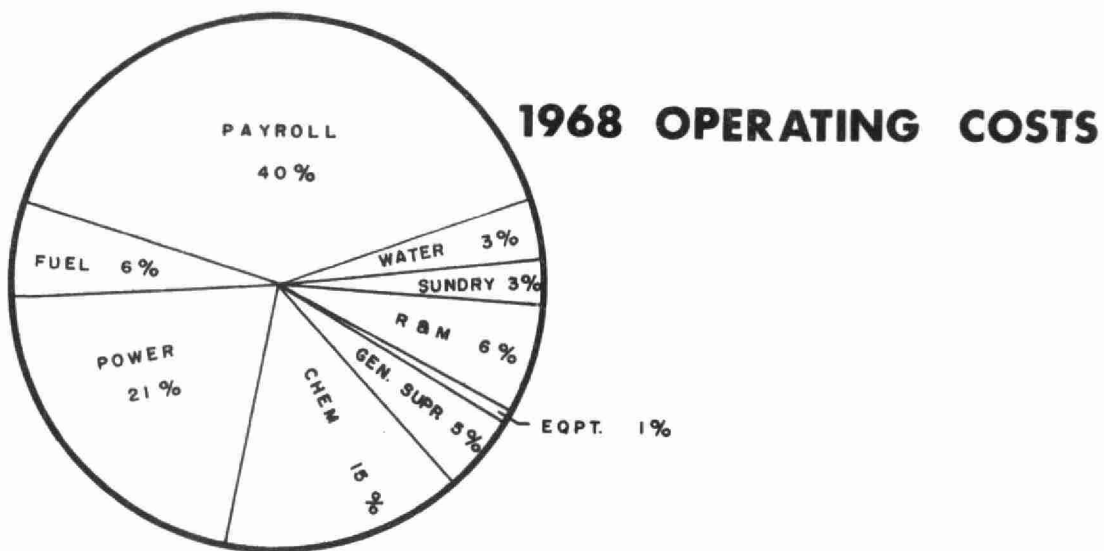
Balance at January 1, 1968	\$ 12,399.48
Deposited by Municipality	4,789.67
Interest Earned	841.52
	<u>          </u>
	\$ 18,030.67
Less Expenditures	<u>154.56</u>
Balance at December 31, 1968	\$ <u>17,876.11</u>



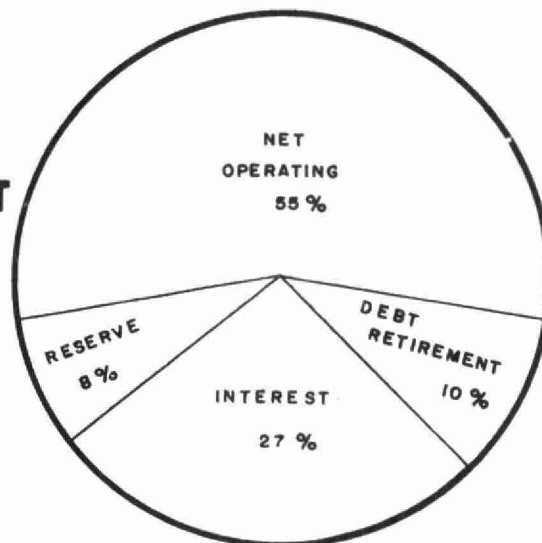
## Monthly Operating Costs

MONTH	TOTAL	PAYROLL	CASUAL	FUEL	POWER	CHEMICAL	GENERAL SUPPLIES	EQUIPMENT	REPAIRS & MAINTENANCE	SUNDRY	TRAVEL
JAN	1726.22	827.13	-	240.00	242.98	-	43.90	2.01	230.10	18.33	121.77
FEB	2480.93	706.69	-	480.00	548.06	477.23	143.08	-	-	28.55	97.32
MAR	2936.56	1248.78	-	-	605.04	352.01	357.38	-	228.36	60.73	84.06
APRIL	1857.38	829.58	-	-	371.65	477.23	160.53	-	-	15.39	3.00
MAY	2647.01	842.71	-	480.00	558.09	352.01	(155.38)	38.70	296.44	124.69	109.75
JUNE	2628.06	813.70	215.24	240.00	534.54	477.23	116.97	29.38	90.33	17.48	93.19
JULY	2179.69	819.39	-	-	637.30	477.22	41.66	-	19.01	101.83	83.28
AUG	2153.88	1210.60	-	-	426.18	-	89.42	-	397.34	27.09	3.25
SEPT	3541.83	952.84	71.54	136.59	755.36	829.24	111.72	230.00	136.46	24.65	293.43
OCT	2672.63	902.53	306.33	-	755.96	-	267.52	-	323.82	-	116.47
NOV	2657.06	880.88	83.03	-	493.01	477.23	99.22	-	95.00	440.45	88.24
DEC	4796.17	2082.45	-	470.38	881.30	852.87	202.79	-	229.35	67.12	9.91
TOTAL	32277.42	12117.28	676.14	2046.97	6809.47	4772.27	1479.01	300.09	2046.21	926.31	1103.67

BRACKETS INDICATE CREDIT



### TOTAL ANNUAL COST



### Yearly Operating Costs

YEAR	M.G.TREATED	TOTAL COST	COST PER MILLION GALLONS	COST PER LB OF BOD REMOVED
1966	231.646	\$25,281.98	\$109.14	23 cents
1967	234.338	29,843.67	127.35	24 cents
1968	198.76	32,277.42	162.39	28 cents

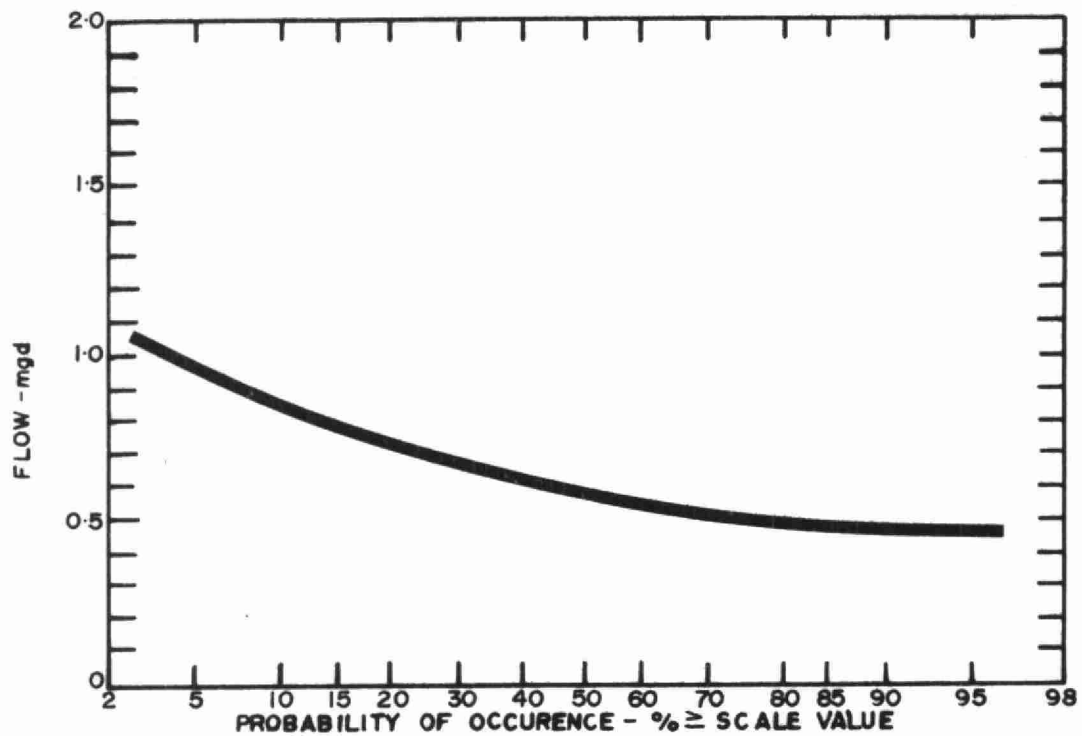
## **Process Data**

The total flow for 1968 was 198.76 million gallons, representing an average daily flow of 540,000 gallons during the year. The daily flow exceeded the average design plant flow of 830,000 gallons per day approximately 12 percent of the time. The plant has a maximum design plant flow capacity of 2.5 mgd.

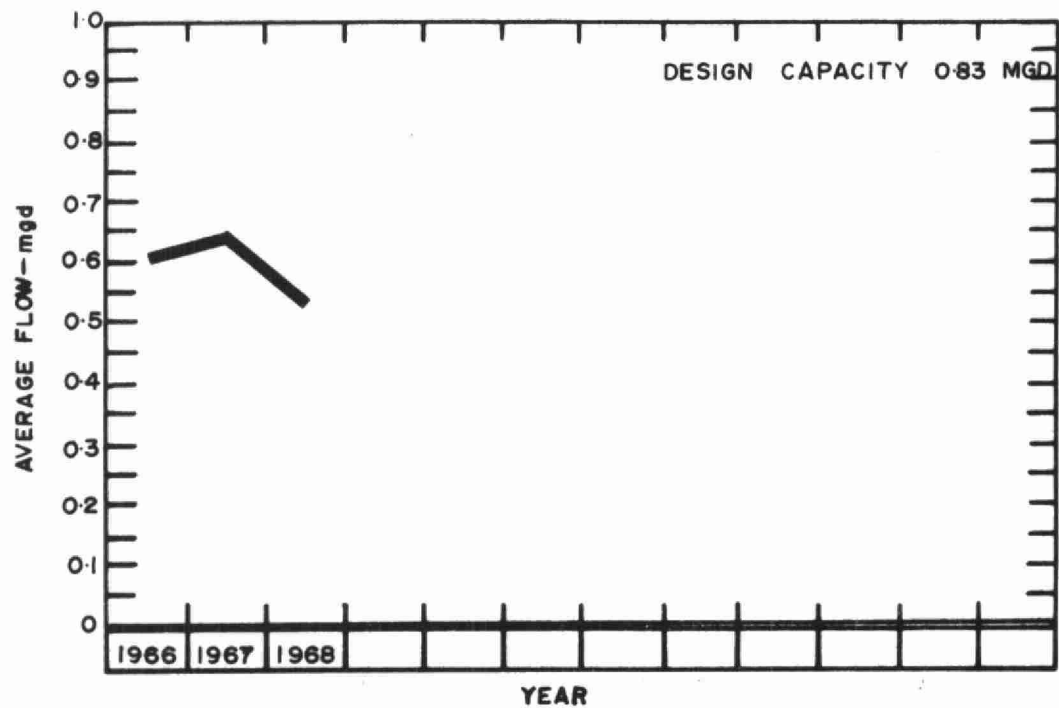
The plant effluent was chlorinated throughout the year and a total of 21,480 pounds of chlorine was used at an average dosage of 10.8 mg/l.

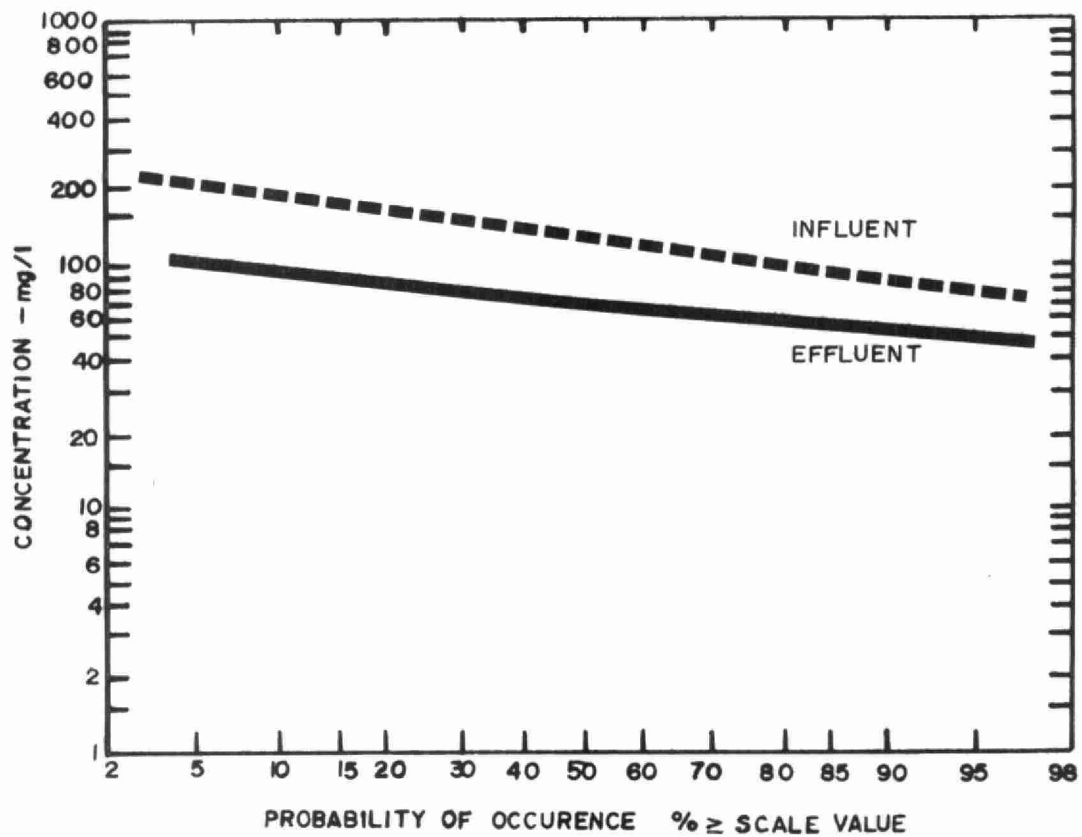
## PLANT FLOWS and CHLORINATION

MONTH	TOTAL FLOW mg	AVERAGE DAILY FLOW mg	MAXIMUM DAILY FLOW mg	MINIMUM DAILY FLOW mg	CHLORINE USED 10 <sup>3</sup> lbs.	DOSAGE mg/l
JAN	18.13	.585	.766	.494	1.88	10.4
FEB	20.52	.708	2.542	.496	1.70	8.3
MAR	23.32	.752	1.361	.502	1.78	7.6
APR	22.36	.745	1.273	.555	1.75	7.8
MAY	16.24	.524	.671	.389	1.88	11.6
JUN	17.13	.571	.974	.456	1.80	10.5
JUL	15.39	.497	.707	.351	1.85	12.0
AUG	14.35	.463	.901	.329	1.84	12.8
SEPT	13.38	.446	.767	.366	1.76	13.2
OCT	11.92	.384	.495	.329	1.80	15.2
NOV	11.79	.393	.720	.309	1.70	14.5
DEC	14.23	.459	1.326	.337	1.74	12.2
TOTAL	198.76	-	-	-	21.48	
AVERAGE	-	.540	-	-	1.79	10.8

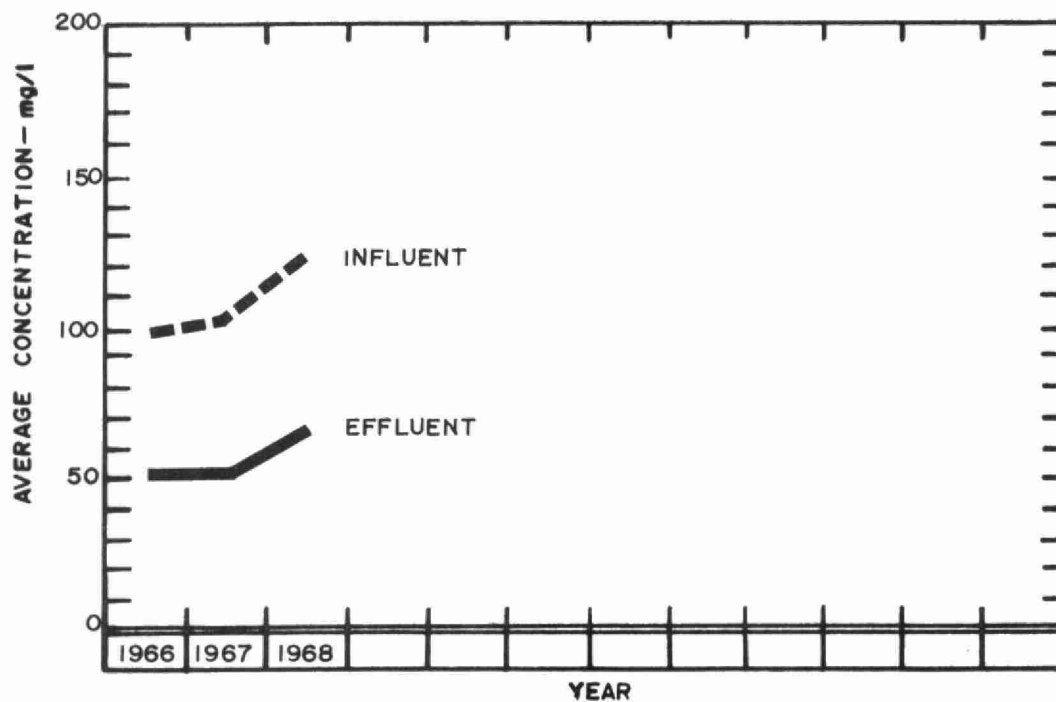


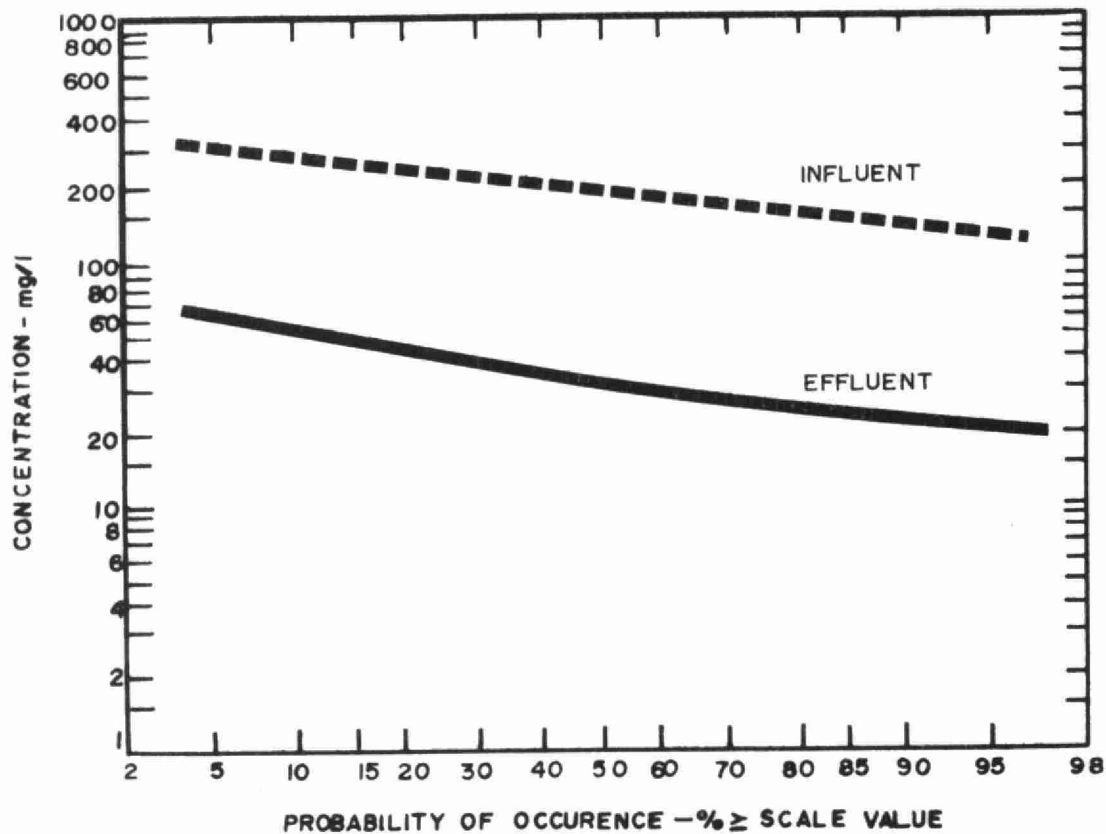
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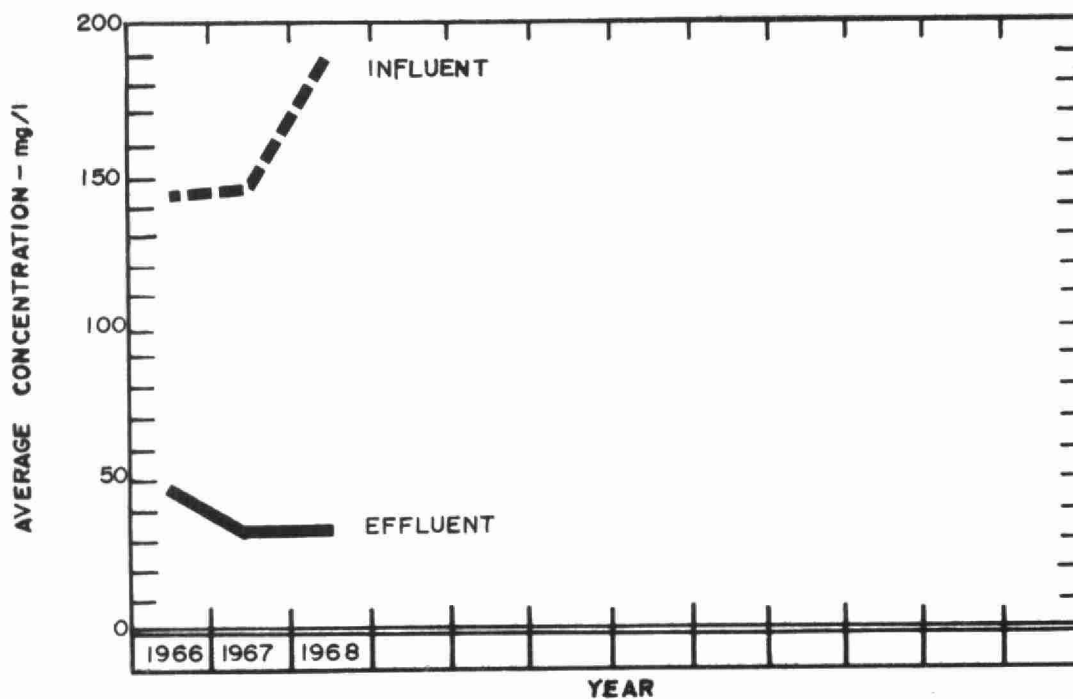


## BIOCHEMICAL OXYGEN DEMAND





## SUSPENDED SOLIDS



## PLANT EFFICIENCY

MONTH	BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				GRIT
	INF CONC <sup>N</sup> mg/l	EFF CONC <sup>N</sup> mg/l	RED <sup>N</sup> %	REMOVAL 10 <sup>4</sup> lb	INF CONC <sup>N</sup> mg/l	EFF CONC <sup>N</sup> mg/l	RED <sup>N</sup> %	REMOVAL 10 <sup>4</sup> lb	REMOVAL ft <sup>3</sup>
JAN	95	48	50	.85	212	28	87	3.34	28
FEB	123	63	49	1.23	180	28	84	3.12	75
MAR	118	74	37	1.03	202	57	72	3.38	170
APR	76	65	14	.25	170	25	85	3.24	64
MAY	117	68	42	.80	183	28	85	2.52	34
JUN	140	67	52	1.25	154	19	88	2.31	198
JULY	128	53	60	1.15	133	28	69	1.62	114
AUG	130	101	22	.42	197	43	78	2.21	89
SEPT	180	59	67	1.62	211	39	82	2.30	52
OCT	104	63	39	.49	233	32	86	2.39	25
NOV	135	74	45	.72	171	26	85	1.71	15
DEC	145	66	54	1.12	222	23	90	2.83	89
TOTAL	-	-	-	10.93	-	-	-	30.97	953
AVERAGE	124	67	46	.91	189	31	83	2.58	79

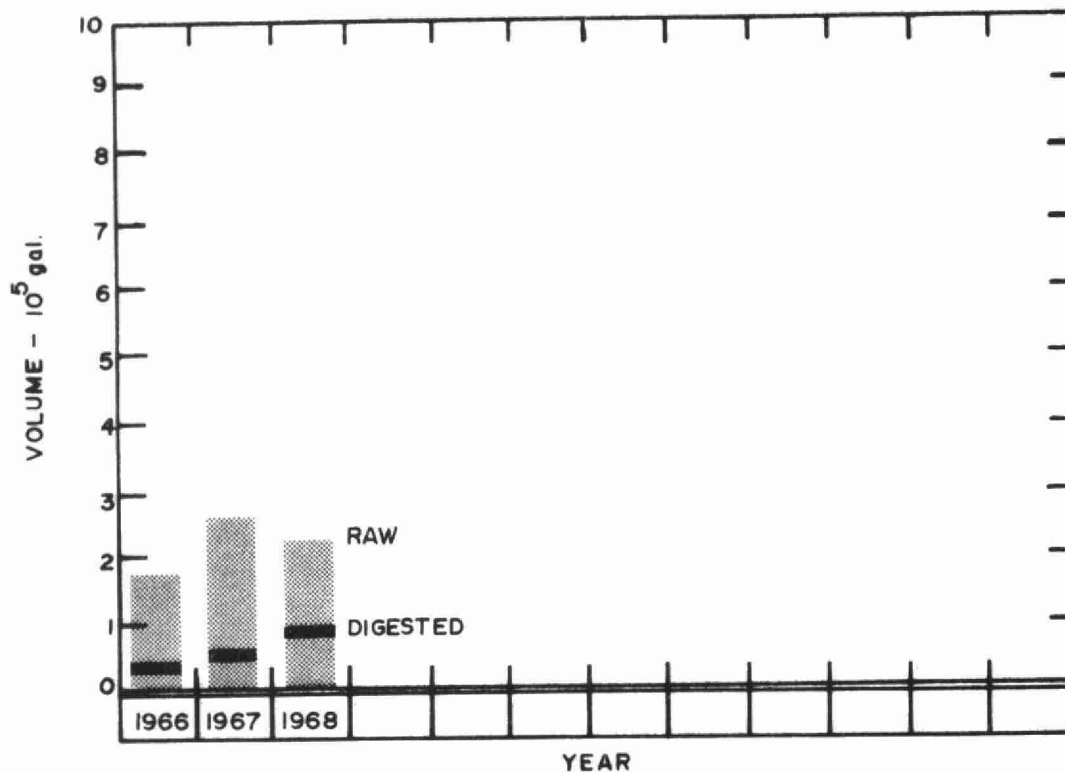
### COMMENTS

The raw sewage had an average concentration of 124 mg/l BOD and 189 mg/l suspended solids compared to 104 mg/l BOD and 145 mg/l suspended solids in 1967.

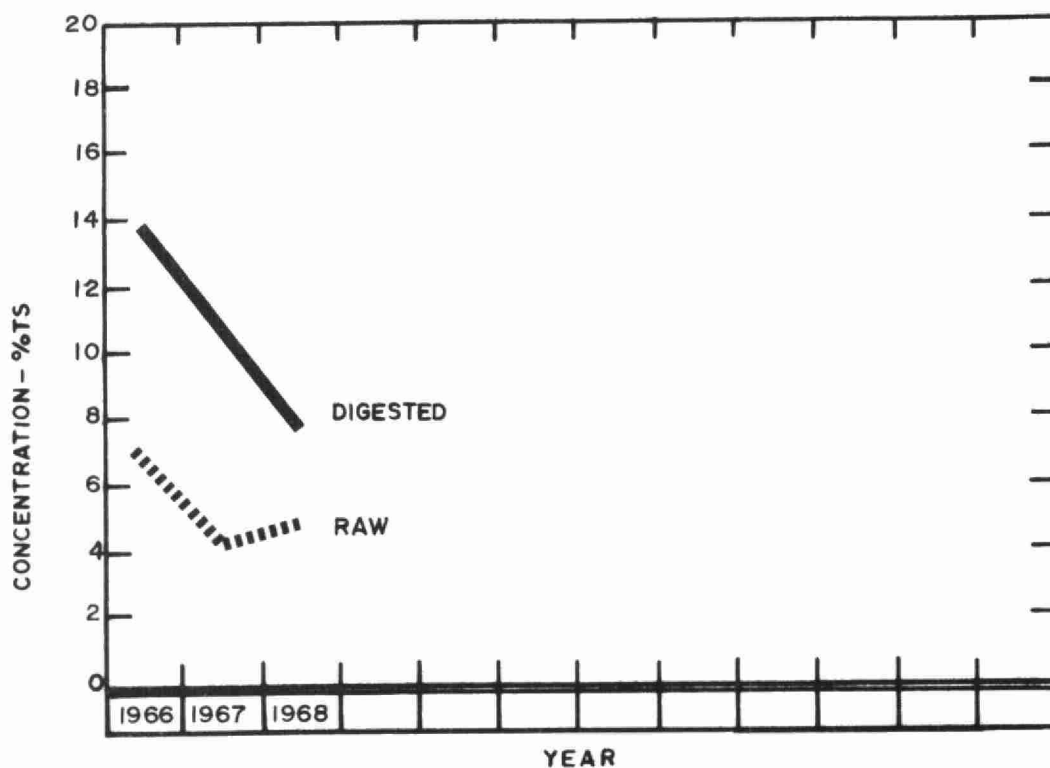
The final effluent had an average concentration of 67 mg/l BOD and 31 mg/l suspended solids. This indicated a 46 percent reduction in BOD and 83 percent reduction in suspended solids, which is considered satisfactory for a primary treatment plant.

A total of 953 cubic feet of grit was removed at the plant for an average of 4.8 cubic feet per million gallons treated.





## DIGESTION



# SLUDGE DIGESTION and DISPOSAL

MONTH	RAW SLUDGE			DIGESTED SLUDGE			SUPERNATANT		SLUDGE DISPOSAL	
	VOLUME 10 <sup>3</sup> gal	T. S. %	V. S. %	VOLUME 10 <sup>3</sup> gal	T. S. %	V. S. %	VOLUME gal	T. S. %	LIQUID yd <sup>3</sup>	DEWATERED yd <sup>3</sup>
JAN	23.8	5.0	78	6.00	-	-	-	.2	0	0
FEB	21.8	4.2	-	3.00	-	-	-	.2	0	0
MAR	22.9	6.8	-	5.50	8.8	-	-	.2	0	33
APR	22.4	4.9	-	8.00	9.8	17	-	.3	0	48
MAY	21.9	4.9	64	9.00	5.9	39	-	.2	0	54
JUN	18.8	5.0	65	9.00	9.4	93	-	.4	0	54
JUL	16.4	5.0	56	13.00	7.0	40	-	1.9	0	78
AUG	16.3	3.8	59	8.00	6.3	37	-	1.2	0	48
SEPT	14.7	6.1	54	8.00	7.0	42	-	.6	0	48
OCT	16.3	4.4	68	8.00	11.6	32	-	.7	0	48
NOV	15.7	5.9	63	4.00	9.0	43	-	.4	0	24
DEC	12.5	2.1	71	4.00	3.1	49	-	.2	0	24
TOTAL	223.5	-	-	85.50	-	-	-	-	0	459
AVERAGE	18.6	4.8	64	7.10	7.8	44	-	.5	0	38

## COMMENTS

A total of 223,500 gallons of raw sludge was pumped to the digester and 85,500 gallons of digested sludge was removed from the digester.

The raw sludge had an average concentration of 4.8 percent total solids, of which 64 percent was volatile matter, and the digested sludge had an average concentration of 7.8 percent total solids of which 44 percent was volatile matter. The supernatant had an average concentration of 0.5 percent total solids. This indicated a volatile reduction of approximately 55 percent, which is satisfactory.



## CONCLUSIONS

Date Due

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